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# Clinical *and* Aesthetic Dermatology

A PEER-REVIEWED JOURNAL PROVIDING EVIDENCE-BASED INFORMATION TO PRACTICING CLINICIANS

www.jcadonline.com

VOL. 8, NO. 1 • JANUARY 2015

## Special Issue: Common Facial Dermatoses

**Atrophic Acne Scarring: A Review of Treatment Options****Efficacy, Safety, and Subject Satisfaction of a Specified Skin Care Regimen to Cleanse, Medicate, Moisturize, and Protect the Skin of Patients Under Treatment for Acne Vulgaris****Comparative Efficacy and Tolerability of Dapsone 5% in Adult Versus Adolescent Females with Acne Vulgaris****Calcium Hydroxylapatite: Over a Decade of Clinical Experience****Papular Scars:  
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# Atrophic Acne Scarring

## A Review of Treatment Options

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### ABSTRACT

**Background:** Scarring is an unfortunate and frequent complication of acne, resulting in significant psychological distress for patients. Fortunately, numerous treatment options exist for acne scarring. **Objectives:** To extensively review the literature on treatment options for atrophic acne scarring. **Materials and methods:** A comprehensive literature search was conducted on the following topics: dermabrasion, subcision, punch techniques, chemical peels, tissue augmentation, and lasers. **Results:** The literature supports the use of various treatment modalities; superior results may be achieved when multiple modalities are combined for a multi-step approach to scarring. **Conclusion:** The safety and efficacy of various treatment devices for acne scarring is well established, but there is a paucity of split-face trials comparing modalities. (*J Clin Aesthet Dermatol.* 2015;8(1):50–58.)

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Acne vulgaris is a common skin disease, affecting nearly all adolescents and 12 to 51 percent of adults aged 20 to 49.<sup>1–3</sup> Scarring is a common sequela, estimated to occur in up to 95 percent of acne patients<sup>4</sup> and resulting in significant psychological distress for many individuals. Given its impact on self-esteem, social interactions, and even the ability to obtain employment,<sup>5</sup> early and effective treatment of acne scarring is paramount.

Acne scarring may be either atrophic or hypertrophic. Atrophic acne scars are further subdivided morphologically into boxcar, icepick, or rolling, with the choice of treatment modality often based on scar type. Over the past few decades, a wide variety of therapeutic interventions have been developed to treat acne scars, including dermabrasion, subcision, punch techniques, chemical peels, tissue augmentation, and laser. Herein, the authors review the various treatments available for atrophic acne scarring.

### DERMABRASION

Dermabrasion, a treatment utilized since the 1950s, involves the use of a serrated wheel, diamond embedded fraises, sterilized sandpaper or wire brush attached to a rapidly rotating handpiece that evenly abrades the skin to the papillary dermis. In contrast, microdermabrasion utilizes aluminum oxide crystals delivered through a nozzle to superficially abrade the stratum corneum through a

series of microlacerations.<sup>6</sup> For acne scarring, dermabrasion may be particularly helpful in softening sharper scar edges. The technique, however, is highly operator-dependent, with error resulting in significant scarring. Additional disadvantages include postoperative pain and healing times of up to one month, with the tendency to form milia.<sup>6</sup> As a result of these disadvantages, dermabrasion has largely been replaced by resurfacing lasers. In a prospective, split-scar study comparing diamond-fraise dermabrasion to fractionated CO<sub>2</sub> laser, two laser treatments resulted in equivalent improvement of acne scarring at three months, with significantly less adverse events than in the dermabrasion-treated group.<sup>7</sup> In the authors' opinion, the poor safety profile, long recovery time, and operator-dependent technique make dermabrasion an inferior choice to laser therapy.

### SUBCISION

Subcutaneous incisionless surgery (subcision) was first introduced in 1995 as an effective treatment for rolling scars.<sup>8</sup> In this procedure, a hypodermic, tribevelled, or filter needle is introduced into the subdermal plane to undermine the scar through a series of backward and forward motions, followed by horizontally rotating the needle in a fanning motion.<sup>9</sup> These motions loosen the fibrotic adhesions that cause the bound-down appearance of rolling scars and create a wound environment amenable to collagen deposition. The bleeding and subsequent clot

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**DISCLOSURE:** Dr. Hession reports no relevant conflicts of interest. Dr. Graber is a consultant for Medicis.

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